

REMARKS

Applicant wishes to thank the Examiner for the courtesy extended in granting a telephone interview held on April 28, 2006, to discuss the outstanding rejection based upon recommended changes to the claims to place the application in condition for allowance. In view of the fact that the Examiner was unwilling to agree to allow the application based upon the suggested changes, this RCE was filed to make the suggested changes to the claims of record and to avoid the necessity of taking yet another extension of time.

Examiner's Office Action dated June 23, 2005, has been carefully reviewed. The rejection of claims 3-6 under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention and the rejection of claims 1-6 under 35 U.S.C. 103(a) as being unpatentable over Guggenbichler (US 2003/0049295) taken together with Gurin (US 2003/0151030) are respectfully traversed.

Claim 1 has been amended to make the claimed subject matter more clearly distinguishable over the cited reference. Claims 3-6 have also been amended to provide proper antecedent bases to depend from claim 1, which is a method claim. More specifically, the term "refrigerator" in claims 3-6 has been changed to "method". Accordingly, the rejection of claims 3-6 under 35 USC 112 should now be withdrawn.

Applicants wish to direct the Examiner's attention to basic requirement of a prima facie case for obviousness under 35 USC 103 as set forth in the MPEP §2143. This section states that to establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally

available to one of ordinary skill in the art, to modify the references or to combine the references teachings. Secondly, there must be a reasonable expectation of success. Finally, the prior art references (or references when combined) must teach or suggest all of the claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure.

In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Section 2143.03 states that all claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a Claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is non-obvious under 35 U.S.C. 103, then any claim depending therefrom is non-obvious. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1998).

By way of review, the present invention as defined in claim 1 is directed to a method for producing an injection-molded material with an antibacterial function. Nanosilver is well-known as a safe and effective antibacterial agent. In the conventional process for molding a polymeric product to provide an antibacterial function, nanosilver particles are mixed with plastic raw material and pigment. The mixture of the nanosilver particles, the plastic raw material and the pigment are heated and melted at a high temperature for even mixing. During the heating

procedure, thermal deformation of the mixture is believed to occur causing the nanosilver particles to become unstable. This results in a discoloration of the mixture. In the method of the present invention the nanosilver particles are coated with pigment onto the surfaces of the plastic raw materials instead of mixing the particles. Surprisingly, by coating the nanosilver particles, onto the surfaces of the raw material the heat-treatment step during mixing may now be eliminated.

The cited reference Guggenbichler is directed to a method for preparing an antimicrobial plastic body. Guggenbichler discloses that, prior to molding, one or several polymer components are treated with a silver colloid (see paragraph 11). In particular, plastic precursors such as pellets and/or one or several inorganic additives are coated with the silver colloid (see paragraph 22). Nevertheless, Guggenbichler requires mixing of the starting materials which have been treated with the colloidal metal before further processing in order to obtain a molded plastic article. This can be done in injection molding machines (see paragraph 12).

Guggenbichler is totally different from the present invention for the following reasons.

The injection molding method as defined in claim 1 does not require a heat treatment procedure since the nanosilver particles and pigment are not mixed with the transparent plastic raw material. Guggenbichler fails to disclose that by coating the nanosilver particles and the pigment onto the surfaces of the plastic raw materials heat treatment is eliminated. Guggenbichler employs a mixing process which is conventionally performed in combination with a heat treatment of the plastic precursor. Therefore, the method of present invention is totally different from that of Guggenbichler.

Independent of the above distinction, claim 1 has been amended to limit the plastic material used in injection molding method to a transparent plastic material. The step of heat treating the mixture causes a discoloration problem which is not relevant when using an opaque plastic raw material. Guggenbichler does not recognize the existence of a discoloration problem when using transparent plastic raw materials. Therefore, the problem solved in the present invention is not discussed or existent in Guggenbichler and the solution thereto is not obvious.

For all of the above reasons, none of the cited references disclose or suggest the features of claim 1 as amended. Consequently, the rejection of claim 1 as being obvious in view of the cited references should be withdrawn.

The rejection of claims 2-6, which depend from claim 1 should be withdrawn for the same reasons indicated above as well as because of the additional features recited in each of these claims which, when taken alone and/or in combination with the features recited in the amended claim 1, clearly differentiate the claims from the cited references taken alone or in combination.

Applicant believes that this is a full and complete response to the Office Action. For the reasons discussed above, applicant now respectfully submits that all of the pending claims are in complete condition for allowance. Accordingly, it is respectfully requested that the Examiner's rejections be withdrawn; and that the claims 1-6 be allowed in their present form. If the Examiner feels that any issues that remain which require discussion the Examiner is kindly invited to contact applicant's undersigned attorney to resolve the issues.

Alternatively, should the Examiner feel that a personal discussion might be helpful in advancing this case to allowance, the Examiner is invited to telephone the undersigned.

Reconsideration and allowance of claims 1-6 is respectfully solicited.

Respectfully submitted,

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By:


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